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Not every man could make this kind of bow, but B.O. did not think that the art was confined to families. He stated that the Wobonuch made the best bows; the glue on theirs was clear, that on Waksachi bows murky.

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For all types of shooting the bow was held in the left hand, with its left end about 30 degrees above horizontal. The left hand was so held that the joint of the third (middle) finger was slightly higher than that of the second (index) finger so that a groove or slight hollow was formed between the third finger and thumb¹⁵⁶ in which the arrow rode (fig. 10, h, Pt. I). Only one type of arrow grasp was used, that between the thumb and first bent joint of the second (index) finger (primary release); there was no hold on the string itself (fig. 10, i, Pt. I). Arrow butts were not thickened.

Four forms of arrow were distinguished: those for birds (pa-ga); for squirrels, rabbits, fox and other small game (pa-ga); for deer or vicious animals such as wildcat, cougar, and bear (u-tipa-ga); and for war (gai-wani). The first was of alderwood (napa-ap) in a single piece. When scraped down with an obsidian blade, these were straightened by being heated over coals, bent and turned in the hands and over the knee. The self-points were ground down on stone and hardened by heating. The feathering was of three split feathers from a hawk wing. The butt was nocked.

For shooting birds a simple alderwood arrow was tipped with four small crosspieces tied on perpendicularly to the shaft (fig. 10, d, Pt. I); the butt was not feathered.

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The deer and war arrows were made of a single shaft of cane (ka-dk:d, Michahai; ha-ob¹, Waksachi), the former long, the latter short. Both had obsidian points. To shape a cane arrow a heated stone arrow straightener was used; the cane itself was not heated. The cane, cut to the desired length, was grasped at each end and pulled back and forth across the stone groove with a rolling motion. It was sighted down its length for straightness.

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The tip end, which had been squared off, was wrapped with six turns of fine sinew cord about three inches from the end. Then the end was turned on a sharp wooden point to open up the partition in the cane, for it had been cut off just before a joint, (the boring process was called maraso-gomi o'o'homa, to-make-a-hole bone-drill). Into the hole thus made was inserted the flint point (fig 10, f, Pt. I). The points for deer arrows were nearly round in cross section and had a round stem. They were obtained in rough form from the Eastern Mono of Owens Valley and dressed locally. With this type of point no force other than wedging held it in place (fig. 10, g, Pt. I); it remained in the wound. Wood points were often substituted.

¹⁵⁶The thumb is regarded as the first finger herein.

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The butt end, already nocked, was now feathered. About 1-1/2 inches from the end the butt was wrapped with three turns of sinew cord, then on each of three ensuing turns the end of a feather was inserted. A final turn was taken around all three feathers and the end fastened by slipping it back under the last turn and pulling it up tight. The forward ends of the feathers were tied down in the same manner. The feathers were not spiraled but had an almost imperceptible turn; nor were they permitted to bow up from the shaft.

The war arrows were made in the same manner but were shorter and were tipped with a small obsidian blade. This was nearly flat in cross section and had a flanged butt. The tip of the shaft was treated as described above, but two splits were made into which the flanged butt was inserted. This was lashed in place with fine sinew and smeared with glue.

A composite arrow which was in popular use for small game was made by combining a cane shaft like that of the deer arrow with a wooden foreshaft of white oak shoots (pu- 'jab'), the very hardest straight wood, according to B.O. He said spicewood (?)¹²⁷ was the alternative if oak was unobtainable. Sometimes foreshafts were tipped with an obsidian point, but more often not. The foreshaft remained in the wound, while the main shaft fell off.

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Arrow straightener.---The Waksachi form of arrow straightener (te para-no, Waksachi; tu padan, Michahai) was usually round or oval and had but one groove, according to B.O. His own was of that type. He had never seen one made; "they were just handed down." While B.O.'s generalization on shape may have been influenced by the aspect of his own, two "Mono" arrow straighteners pictured by Kroeber¹²⁸ are ovoid as opposed to the rather squared-off Yokuts type. (See also pl. 1, Pt. I, lower right foreground, and pl. 2, d herein.)

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Traps.---A spring trap baited with acorn, which B.O. did not describe lucidly, was used for rabbits, jays, and squirrels. Quail were shot, not trapped. Ducks and geese were seldom seen in this mountain region.

Deer hunting.---Two methods were in use, that of a single hunter wearing the deer disguise, and that of several participants engaging in a communal drive. The former method was like that of the Yokuts. The second was so arranged that one or two accurate shooters hid themselves on known deer trails down which the animals were quietly driven by the other members of the party. Anyone who wished might join such a hunt, and all who did so were entitled to part of the spoils. B.O. said that in dividing the animals the shooters each received antlers, skin, and a rump, the choice

¹²⁷California Laurel?¹²⁸Handbook, pl. 49, a, b, c.

1: Gayton

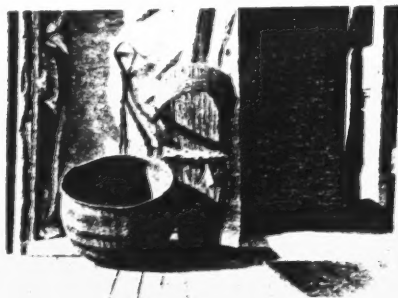
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(1925-1930) 1948

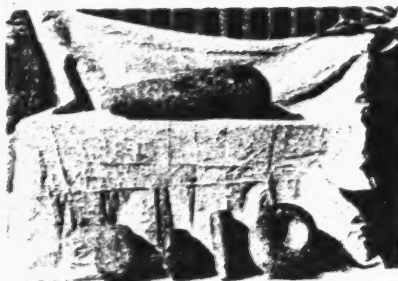
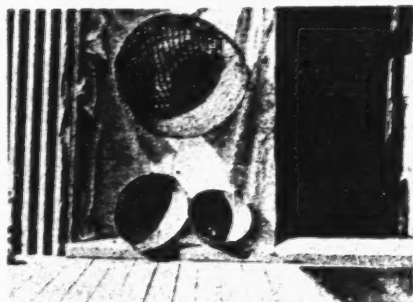
NS29 Yokuts NS29

[P. 295] Western Mono NS25

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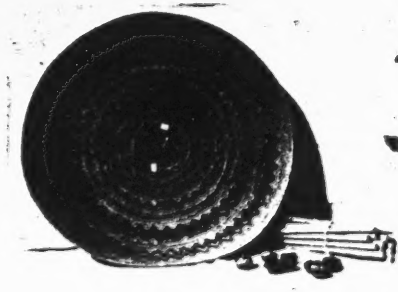
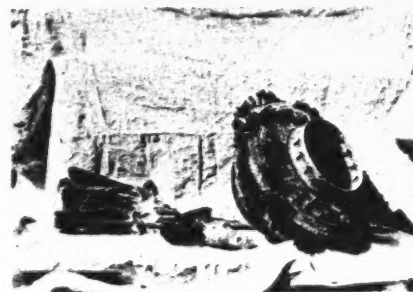


PLATE II. YOKUTS AND WESTERN MONO SPECIMENS, GÖTEBORO MUSEUM

226 surface. The *funoi* net was fastened to a circular frame on a pole, held vertically, and raised. The more usual Californian net of this type is on a half hoop, and is used rather for scooping or horizontal lifting.

263. Salt may have been obtained at springs, but the reported cases are from the Pitkachi, whose "salt" stank; from the Chukchansi, who went to the plains to scrape a sort of alkali off the ground; and from the Yaudanchi, who, with other southern tribes, gathered a salty grass known as *alit* and beat it on stones to extract the juice; which was particularly favored with green clover.

THE BOW.

411 Common bows for small game were little more than a shaped stick; good bows were carefully smoothed of large mountain cedar wood and sinew backed. The commonest type, primarily for the hunt, was nearly as long as a man, of about two fingers' width and the thickness of one. The ends were recurved, probably through a curling back of the thickened sinew. Bows made specifically for fighting were shorter, broader, and flatter, and pinched in the middle. Except for being unpainted and probably not quite so extreme in form, this type appears to have been the same as the northern California one.

Mention of the right and left end of the bow makes it seem to have been held horizontally, or at least diagonally, as by most California tribes.

The arrow, *shikid* generically, had three forms among the Yaudanchi, known as *fuyosh*, *djibaku*, and *cul'ud*. The war arrow had no foreshaft, but a rather long wooden point, notched. It measured from the finger tip nearly to the opposite shoulder or a trifle more than the possible pull of the bow. The Mohave also fought with arrows lacking flint tips. The ordinary hunting arrow had a long sharpened foreshaft, but no real head. The deer arrow had foreshaft and flint head, but the foreshaft was socketed without glue or tie, so that the main shaft would disengage after hitting.

413 The prevailing arrow straightener among the Yokuts is the southern California form: a well-shaped rectangular block of soft stone, often rounded or ridged on top, and invariably with a polished transverse groove. (Pl. 49, c.) This implement is undoubtedly associated with the employment of cane for arrows: the Yokuts are known to have used this plant, though not exclusively. The joints were warmed in the groove and bent by hand or on the ridge after the stone had been heated; the groove was also used for smoothing. The holed straightener of wood or horn for wooden shafts, as employed all over northern California, has not been reported from the Yokuts.

2: Kroeber E-5 (ca. 1918) 1953

NS29 Yokuts NS29

SERRANO NS20

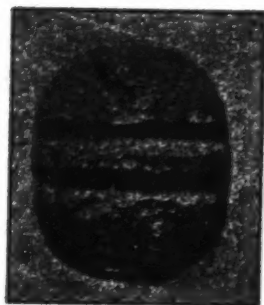
Western Mono NS25

River YUMANS NT15

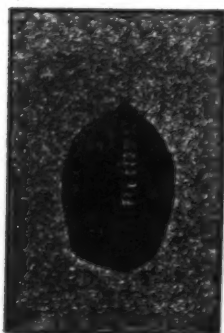
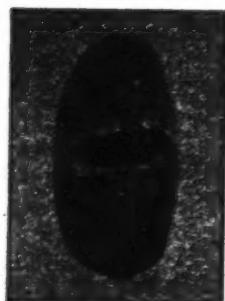
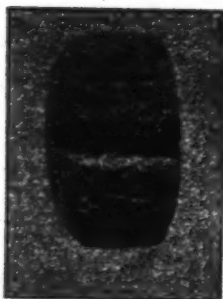
Diegueno US9

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ARROW STRAIGHTENERS

a, b, Mono; c, Yokuts; d, Chinle; e, Diegueno; f, Mohave (gottary)

[p. 530(A)]

343 covered with a brush and tule thatch and then with dirt. The roofs of these houses were so low that a man could probably not stand upright in them. Some of the tribes called the sweat house, *Mosh*.

The structure was generally quite small, probably never more than twelve or fourteen feet in length, and was not used as a dance house as was frequently done among other tribes. We do not know of its use as a council chamber, or assembly hall. What information the writer has been able to secure on this subject indicates that the Yokuts probably used the house of the head man, or chief, for these purposes.

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During the winter the sweat house was a regular sleeping place for the older men. The door generally faced the south, but if the house was on the south side of the stream it faced the stream. We are told that in some instances a brush shelter, or wind break, was erected on either side of a path leading from the sweat house to the water, which was never more than a few yards distance.

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In using the sweat house, a fire was built in the center and stones were heated in it. All openings were closed and water was poured upon the hot stones. In addition to the intense heat due to the closed door, as well as the smoke from the fire, the steam from the hot rocks soon brought the inmates to a state of profuse perspiration and near suffocation.

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During the time of sweating, a sweat stick, or scraper, was used to remove the perspiration from the body. This scraper was sometimes made from a split elk rib. It was about eighteen inches long and curved both along its length and in cross section. The elk rib was split along the edges and the thin, concave inner half used.

After enduring this state of affairs as long as possible, during which time there probably was competition as to who would be the last one to leave the place, the opening cover was thrown aside and a group of yelling, perspiring Indians ran from the house and jumped into the water.

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Often this form of bath was indulged in at night, after which those participating would go to their beds and to sleep. In the morning, generally before sun-up, practically every Indian in the rancheria would have left his house, running and shouting, and would have bathed in the near-by stream.

I have been told by old Indians, and have proved by investigation, that the Yokuts sweat house was located at the